



# FL124 Crystal filter daughter board option for the AR7030

The AR7030 is designed to accept a total of six IF filters, this means that two optional filters may be fitted in addition to the standard four provided. Within reason any 455KHz filter may be fitted with the main unit PCB being drilled to accept the Murata and Collins filter packages.

To extend the range of filter options available the FL124 daughter board enables three crystal filters in either the 64 x 24 x 22 or 50 x 18 x 18 packages to be fitted. This gives you the option of fitting filters from other manufacturers as well as the range offered by AOR. Typical examples are those available from Kenwood under type number YG455xx (where xx indicates the bandwidth). You should be careful to check that the centre frequency of the filter is actually 455KHz as some Kenwood filters, (particularly the earlier types) have the centre frequency offset.

Two of the filters positions are designed to connect into the option filter slots, with the third being provided should you wish to replace one of the standard filters with a higher specification type.

## **FL124 contents:**

- Qty 1 PCB SW124
- Qty 1 Mounting bracket
- Qty 4 M3x6 machine screw
- Qty 2 M3.5x6 Taptite screw
- Qty 4 0.01uF capacitors
- Qty 4 Coaxial cable assembly
- Qty 4 Locking pin header

## **Assembly details:**

The filter option daughter board is supplied in kit form so before beginning a small amount of assembly is required:

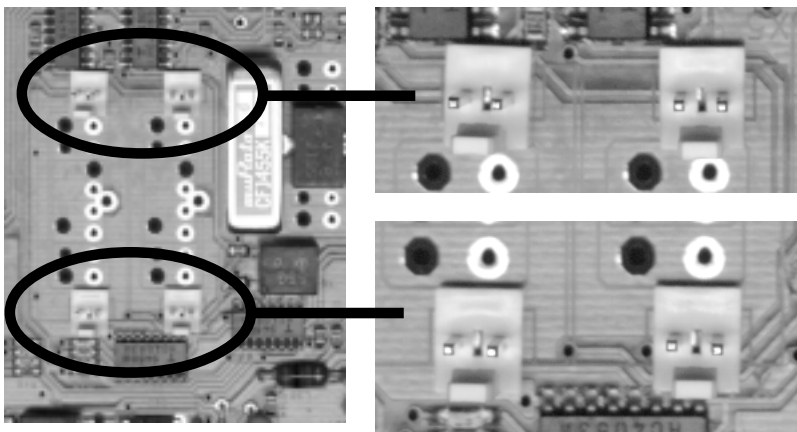
Fit the capacitors in positions C1 2 3 & 4 as appropriate, depending on the number of filters to be fitted. Solder the cable assemblies into the appropriate positions adjacent to the capacitors taking note that the hole for the braid of the cable is the larger of the two. Fit your chosen filters onto the PCB and solder the pins. In the case of some filter types it may be necessary to reduce the length of the threaded stud on the filter slightly using a file to prevent the stud interfering with the bracket.

## Fitting instructions:

Before starting, place a cloth on the work surface to prevent scratching the receiver.

To gain access for filter fitting, both top and bottom covers need removing. The top is held by four screws requiring a 2.5mm hex key to undo them. The loudspeaker is connected with wires and sockets J16 & J17. To release the wires lift the black plastic connector up (about 5mm).

The bottom plate is held by six No.2 posi-drive screws.



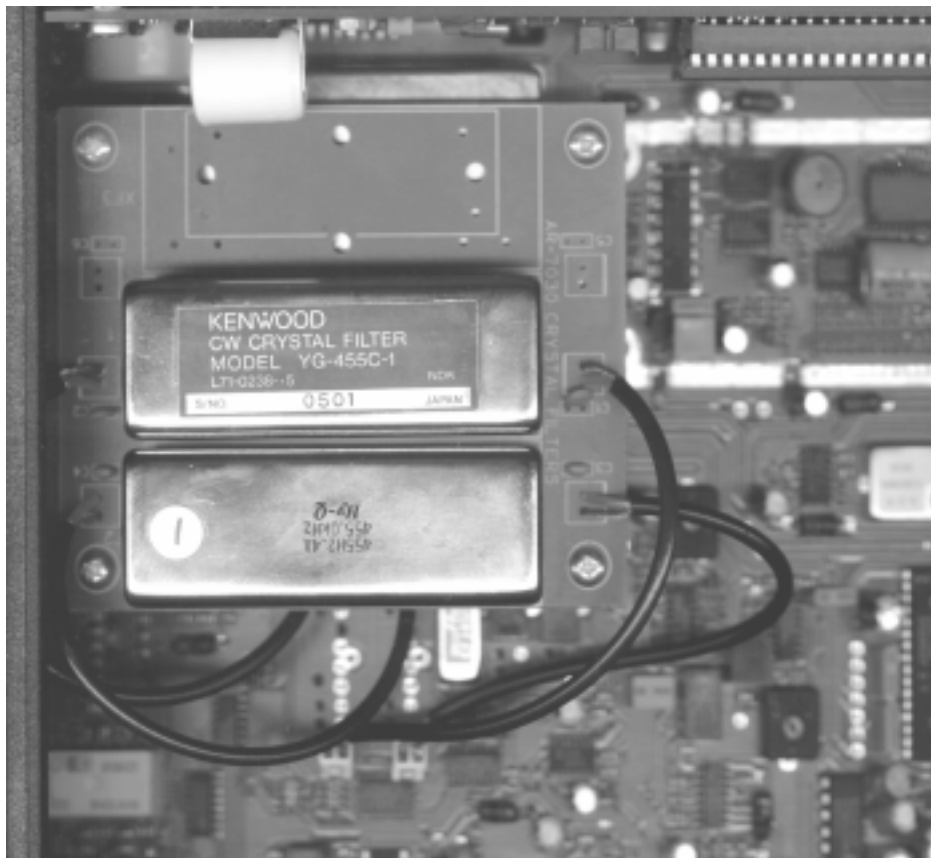
Solder the locking headers in the positions indicated in the picture depending on how many optional crystal filters are being fitted. There are two headers per filter and each pair is fitted in either positions X 7 or X 8. It really doesn't matter which is used as the AR7030 microprocessor will sort it out for you. Pay special attention to the direction in which the locking tab faces, both tabs should be facing the rear of the set as the picture shows.

The bracket which carries the filter board can be fitted in one of three positions depending on what other options are either fitted or may be considered in the future, however as the battery option occupies the two rear most positions when fitted we recommend you choose the front position just behind the NiCad back up cell on the control unit.

Plug the coaxial cables into the appropriate connectors which you have fitted to the main PCB and temporarily fix the PCB to the bracket using two of the M3x6 screws. Offer the bracket to the set to decide on the position. The bracket fixes by being screwed to the side rail using the continuous slot just below the top face of the side rail. Position the bracket so that if the largest of the two filters were fitted in position XF3 it would just clear the back up battery.

If only XF1 is fitted you can now secure the bracket to the side rail using the two M3.3x6 Taptite screws and a no.2 Posidrive screwdriver, otherwise you will need to remove the PCB from the bracket to gain access to the screw holes.

Re fit the PCB to the bracket using the four M3x6 machine screws and the job is complete.



Either test at this point or replace the top & bottom case halves making sure that you reconnect the speaker wires by placing the wires in J16 & J17 then pressing the black plastic cable sockets downward. **It is important that you fit the top case BEFORE the bottom case.**

When replacing the top, make sure that it is pressed fully home (flush to the sides) before putting the screws in. The screw threads are not long enough to pull the top down into the side pieces without damaging the threads. **Tighten the screws only finger tight - do not over tighten.**

You will need to run the filter calibration routine from the receiver's menu... there are no measurements for you to take and no twiddling of adjustment points... you CANNOT improve performance by making manual adjustments. Refer to section 6-2 of the operating manual (page 14) for further information.

*As has been mentioned, the third crystal filter position on the daughter board has been provided in case you should wish to replace one of the standard filters with a higher quality type. It is assumed that if you are considering this you possess the appropriate knowledge to perform this task without the aid of written instructions.*

End. (sheet V1.1 E&OE)



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